

OPTIMIZING MANAGE MOBILE APPLICATION PROJECTS WITH LIMITED RESOURCES IN PT. XYZ

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Abstract— XYZ Company was established in 1999 and since 2003 focuses on mobile and internet technology. Their vision is to become a leading provider for mobile-service-platform and value-added service solutions and its mission is to help brands, content providers, portals and media companies to enable themselves and their contents to be “mobile ready”. Their experiences combined with extensive R&D make them able to provide their clients a head start in their new media and mobile business initiatives. They are also cooperating with prominent vendor like EA and Disney as a reseller of mobile content for Indonesia market. Currently they have around 70 employees that divided into 3 divisions: Content Division (selling mobile content), Solution Division (help clients to find solutions using mobile technology) and R & D division (research against latest mobile technology). Mobile application industry growing very fast in line with high demand of smartphone, and now mobile applications also become one of company's marketing tool. This condition can be maximized by XYZ Company through partnering with advertising agency that makes them flooded with many mobile application projects that makes them facing “good problem” related with limited mobile programmers. In other hands they are facing “real problem” in content division, the total revenue dropped significantly up to 65% due to government policy meanwhile company avoid to do lay-off and hope the revenue from this division will raise again. In normal situation, this good problem can be solved by in-house with hire new programmers (if the project related with company's core competence) or outsourcing (if the project not too related with company's core competence), but adding with dropped revenue from content division makes this problem become more complex. This final project purposes is to find out which one better in-house or outsourcing a project and whether any other alternatives that fit with XYZ Company's current condition. In order to find the solutions, data collected through direct interview to related parties and accredited media such as newspaper and website. The results from data analysis show additional problems where between programmer quite difficult to share knowledge and also several programmers resigned and move to other companies due to high competition. Through project management, knowledge management and business strategy theory approach, this final project recommend that company has to do improvement in project management through establish project management office, and implement good knowledge management system to easier sharing knowledge between programmers. In addition of that, company also has to able to increase their programmers' commitment by developing their skill with training and education to improve their competencies and find a way to make content division's

revenue rise again. This recommendation need to be supported and socialize well to all stake holders.

Keywords: outsourcing, project management, project management office.

I. INTRODUCTION

Information technology (IT) industry especially mobile technology in Indonesia is growing very fast especially in developing country like Indonesia. In third quarter 2011 the demand growth for smartphone in Indonesia grew as much as 48 percent respectively. The smartphone segment is expected to continue expanding and developing because smartphone manufacturers always innovate to make more device models, better operating systems, and faster processors. Various models in smartphones come from Samsung with their Galaxy Series, Apple with their iPhone/iPod series, Research In Motion (RIM) with their Blackberry and Nokia with their N series. Meanwhile Various Operating Systems in smartphone came from Google with their Android, Apple with their iOS, RIM with their Blackberry OS, SUN with their Java OS and Microsoft with their Windows Mobile.

Nowadays, many smartphone manufacturers look Indonesia as a country with enormous and dynamic market. In Indonesia, Samsung can sell more than 1,200 Galaxy Tab 10.1 handsets on their first day launch. Besides that, Indonesia was chosen as one of the country to be prioritized for their new product launching. It is proved by Blackberry chose Indonesia to be the first country to launch their new smartphone, Blackberry 9790 (Bellagio) 2 on November 25, 2011.

Smartphone manufactures like Samsung, Apple, Nokia, and RIM generate their revenue from selling the device, mobile phone, for certain, but in last few years Operating System manufactures create new and fantastic business model by opening their Software Development Kit (SDK) to public so that it will encourage programmers from all around the world to develop mobile applications. Mobile application is an application that running in smartphone. It can be application to help user in navigation, application for scheduling meetings, application for social networking,

or simply a game. There are many mobile applications can be developed by one.

To support this business, Operating System manufacturers open their online store like Google with their Android Market, which later was rebranded as Google Play, and Apple with their App Store. These online stores act like aggregators where all programmers either individual or company can upload their application and set its price from zero price (free). Smartphone customers can browse application they want easily and buy it from there. Programmers either individual or company can upload their application in online store with free, where the development cost is got from a company that will use this application as a marketing tool to promote their product that bundled in application. The mobile application that developed can be game or application to attract people to download and try it and combined with promo image/information. This business model was adapted very fast and now many companies use this model as a new channel to advertise their product or make them closer to their customer. Below is comparison of free and paid applications (Admob, 2010).

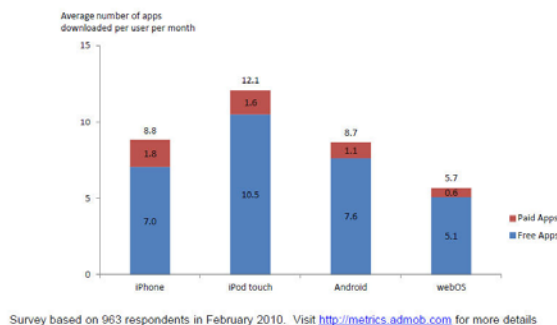


Figure 1. Admob Survey Results for Apps Downloaded

XYZ Company is an IT Company that established in 1999 but in 2003 XYZ Company Decided to focus their business on next generation Mobile and Internet technologies and combine extensive research and development. XYZ Company was able to provide their clients a head start in their new media and mobile business initiatives. Currently, it has around 70 employees. XYZ Company core competence lies in the experience and in-depth understanding of the mobile service market, unrivalled local and regional footprints, as well as flexibility to response to each unique client requirements. In addition of that XYZ company also receives many awards winning provider of Web, Mobile and New Media solutions and has set milestones for its achievement in mobile industry.

With experience in deploying commercial mobile service for Nokia in 9 languages and launching mobile site in 35 countries, PT XYZ is well equipped to be the right partner to help brand owners, content providers, portals and media companies to enable themselves and their contents to be “mobile ready” and start generating revenues or promoting their products. XYZ creates, manages and launches services that are interesting, compelling and engaging.

XYZ has vast expertise in mobile service platform development and ability to work at any level of the value chain backed by their years of experience and professional team of engineers. Many big companies have trusted on XYZ in providing the best solutions toward the next generation of mobile technologies like Nokia, Telkomsel, Samsung and BNI.

XYZ’s vision is to become a leading provider for mobile-service-platform and value-added service solutions in the region with expertise in multichannel, multi-platform service-management, content-aggregation systems and custom solutions, meanwhile its mission is to helps brands, content providers, portals and media companies to enable themselves and their contents to be “mobile ready” and start generating revenues with create, manage and launch services that are interesting, compelling and engaging.

II. BUSINESS ISSUE EXPLORATION

The condition where mobile applications become new marketing channel for company to promote/introduce their products supported with booming of smartphone users in Indonesia make XYZ flooded with many projects from many brands in various industries like beverages, entertainment, automotive, etc. A project is a temporary endeavor undertaken to create a unique product, service or result (Project Management Institute, 2008). Many projects that coming in are a good thing for the company, but in the other hand it raise a problem because currently the company does not have sufficient programmers to develop those projects. This has led the company in difficult situation whether to develop in-house, which means resource recruitment is needed, or outsourcing those projects to other IT Company. Outsourcing is the purchase of a value-creating activity from an external supplier (Hit, 2011). The option either to develop in-house or outsource the project has advantages and disadvantages. Advantages of in-house development are development cost is cheaper because they develop internally, the company can control the quality of product (internal controlling), easier to monitoring and manage the project. Disadvantages of in-house development are have to make sure the sustainability of project, new programmers need adaptation and also transfer knowledge from existing programmers. Advantages of outsourcing are the company can accept all coming projects: it is simple just handover the project and take some profit margin, no need to worry to have more programmers than needed after project finished. Disadvantages of outsourcing are development cost is more expensive because outsourcing to other IT Company, the company does not have full control against product development so they trust the quality product to them, it will cause the product lost company identity or DNA of XYZ Company, it is quite hard to maintain the project in the future if there are some enhancements while company has no longer cooperates with the previous outsourcing company that handle and has knowledge on it.

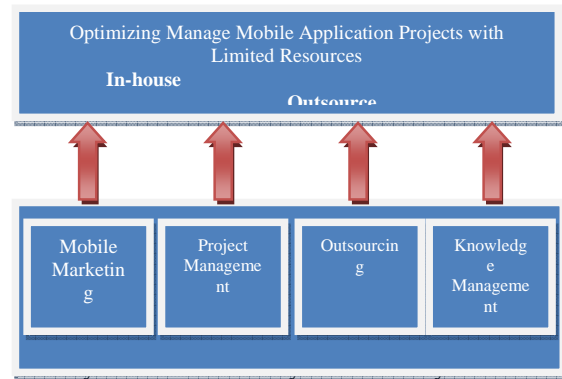
If a project or subproject needs to be outsourced to other vendor, there needs a contract as an agreement

between two parties, there are some types of contract available according to (Longman, 2005). First, Firm Fixed Price (FFP) where the vendor will only receive the agreed price, regardless of any unanticipated cost or scheduled overruns. Second, Firm Price Incentive Fee (FPIF) where the vendor receives the agreed price plus a bonus for on-time or early completion. Third, Cost Plus Incentive Fee (CPIF) where the vendor receives actual costs to provide the goods or services plus a bonus for on-time or early completion. Fourth, Cost Plus Fixed Fee (CPFF) where the vendor receives actual costs plus a guaranteed fee, even if the project is not completed. Fifth, Cost Plus Award Fee (CPAF) where the vendor receives actual costs plus an award based on performance against some quality indicator(s).

Currently Solution Division of XYZ Company has 8 programmers that focus on mobile application development. Ideally a mobile application project needs 2 programmers with around 20 man-days per project, so based on programmers availability XYZ Company can only handle 4 mobile applications projects in the same time, with so many projects coming at the same time XYZ Company has dilemma to choose one of these options because on one side the company does not want to lose these incoming projects but on the other side they have to make sure that even tough outsourced, the quality of product as a XYZ product do not lose their identity through implementation good knowledge management. Knowledge management refers to process of transition and transfer of knowledge between employees (Tjakraatmadja, 2006).

A. Conceptual Framework

In managing mobile application projects with limited resources (programmers), at least it has two options which are in-house and outsource. In order to find alternative solutions for this, researcher needs some literature review. Firstly it needed mobile marketing to know what are benefit, advantage and disadvantage of mobile application so researcher will know better against it. Mobile Marketing is marketing on or with a mobile device. Mobile marketing offering various benefits, it had practically changed the face of conventional marketing and the way companies viewed this aspect of business (Viswanathan). Secondly is Project Management, regarding how to manage project in effective and efficient way started from define timeline, budget, acquire project team, develop project team, and controlling the project. Thirdly is Outsourcing to know what is advantage and disadvantage of outsourcing and in what condition company should take decision to outsource. Lastly is knowledge management to make company will not lose their knowledge even tough to outsource the project and to know what is the benefit and challenge of knowledge management in order to increase the work effectiveness of programmers. Deep knowledge against these literature reviews will help researcher to find alternative solutions that supported with data collection and data analysis. Below is figure of conceptual framework:



data that collected directly from source that will be collected with interview face to face with respondents. Interview is chosen with 2 considerations are topics can be explored in depth and personal interaction with respondent and get direct feedback from respondent. Secondary data are data that collected by get information from media, e.g. website, newspaper, magazine, etc. In this case, secondary data got data from PT XYZ website and their company profile.

C. Analysis of Business Situation

This final project chooses interview mechanism with interviewed project manager of solution division, mobile application programmer and research programmer. The purpose of the Project Manager interviewed is to know current condition of company in general especially in solution division, problem that might be facing and some actions that have been taken to solve it. The purpose of mobile programmer and research programmer interview is to know their opinion regarding current company condition, problem that might be facing and their suggestion to company. All answers are recorded and subjects to be approved by all the respondents. After interviewed and processed the data, there are some findings. First, high trends of mobile application makes solution revenue raise 20% but Content division revenue drop until 80% because of Government (BRTI) regulations against SMS Premium. Second, mobile application initially used by advertising agency as one of useful marketing tool to attract potential customers, and XYZ company try to grab and maximized this opportunity by doing strategic action through partnership with advertising agency where company will develop all mobile applications from their clients. Third, in doing projects development, company prefer to do these in-house instead of outsourced because it is easier for them to monitor and communicate between team member. Fourth, when a project coming in to decide a project will be outsourced or in-house, company will do internal meeting first to find out load of programmers and urgency existing projects and if there some possibilities to re-prioritize it and outsourcing will be taken as a last option if there is no possibilities to do it in-house. Fifth, if a project has to be outsourced, company prefer to outsource a project to vendor that they already know its reputation or at least they got the info from reference by trusted person, this concern related with coordination and quality of project

because if company and vendor already know each other it is easier for company to communicate and monitoring the project. Sixth, company facing problem against lack of resources due to several mobile application programmers resign and move to other companies because high demand of mobile application programmers meanwhile currently company discourages to recruit new mobile application programmers as a replacement due to financial condition. Seventh, company focuses on generate revenue by handle project from clients instead of doing research due to financial condition, this decision makes several research projects postponed and several research programmers from R & D division reassigned to help solution division in project development. Eighth, when company reassigns several research programmers from research project to help solution division in project development, solution division acts research programmers like in-house resources. It means that research programmer will be under solution division informally, this act makes company will face difficulties when do evaluation regarding performance for each division and research programmers. Ninth, research programmers are chosen to help solution division because R&D division's client is company itself so it has some flexibility and also previously research programmers were got from solution division so between programmers themselves already know each other regarding what technology that is used and easier to communicate between them. Tenth, company's differentiators compare with its competitors are company has a good portfolio and experienced in mobile technology and maintains good relationship through partnership with advertising agency. Eleventh, currently company has 2 business units (solution and content divisions) to generate revenue while finding out any possibilities for new business unit or new income channel with doing research and innovation in mobile technology that being done by R & D division. Twelfth, solution programmers sometime face difficulties to solve problem in programming and reluctant to ask other friends while they busy with their work. It is really takes time from programmers to wait their friends not too busy before asking. Thirteenth, research programmers sometime do not know what is the scope and purpose of their research project because the project objective is not clear and they have to develop by their own perception at first time before revised by management until management satisfied with their research.

III. BUSINESS SOLUTION

Based on analysis of business situation above, T\to determine the business solution, several alternatives are developed to be then analyzed in determining optimal solution for the company's business issue.

A. Alternative of Business Solution

After finding the main cause(s) of the business issue, researcher proposes several alternative solutions. First, hire programmers with contract based because mobile application project is a company's core

competence so it is better for company to hire programmers with contract based first per project in certain period like 6 months or 1 year with possibilities to make them become permanent employee if company's financial condition is better. Second, prioritize handle project that become company specialist and if this project still need to be outsourced at least one senior programmer from internal pointed as a supervisor to monitoring and make sure quality of development. Third, establish Project Management Office to coordinating communication across projects and optimizes the use of shared resources (research programmers) to make them clear what is their project scope, timeline and tasks. Fourth, implements a good knowledge management system which encourages every programmer to share their knowledge and experience that supported by technology to keep the quality of mobile application products, make development process faster and transfer knowledge between programmers will be run by this system. Fifth, reduce programmers' turnover especially for mobile application programmers by increase their commitment through develop their skill with training and education to improve their competencies. Lastly, cooperative strategy through partnering with advertising agency to maximized opportunity with minimized effort and cost to get mobile application projects. This partnership will make company no need to approach their clients one by one because advertising agency will bring their clients to XYZ Company to provide mobile application as one of marketing tool for them.

B. Analysis of Business Solution

Among the identified alternatives, due to company's financial condition there are divided into short term and long term. Short term means that the alternatives need to implement soon meanwhile long term alternatives can be implemented later after company's financial condition better. Short term alternatives are hire programmer with contract based, establish Project Management Office and implement good knowledge management. Long term alternatives are increase programmer's commitment and doing cooperative strategy with partners either locally or globally.

Hire programmer with contract based need to implement soon because mobile application projects is related with company's core competence so if all resources (both solution's programmers and research's programmers) have been fully utilized then this is the most feasible option where company still can do in-house but without no long commitment in the future. This options need to be combined with Knowledge Management System to make the knowledge still keep in company even though the programmer leave company after project finished.

Project Management Office (PMO) need to establish soon because it can increase company effectiveness in handle a project and easier to calculate shared resources performance. PMO main tasks are to coordinating communication across projects, collection program and project information to establish priorities, optimize shared resources across all projects, and

decide on project initiation, continuation or termination. These decisions are taken together with general manager and executive board in order to align the program and project execution to the corporate strategies thus a project management officer position needs a person that has deep knowledge in project management, know a little bit about technical and mobile technology and the important thing has a good leadership and communication skill. Project Management Office will work as described in Figure 1. Project Coordination Diagram, firstly every incoming project is still handled by project manager to gather data and information from client, programmers or event executive boards then after all project information (timeline, scope, resources assigned) completed a PMO will review it to establish priorities, continuation or even termination this project under general manager's approval if not used shared resources or board's approval if used shared resources. In reviewing, PMO has rights to access directly to programmers or even general managers/executive boards if needed. If a project need to use some shared resources (research programmers), a project manager will make sub timeline and sub scope of this project that will be handled by shared resources to make company easier to calculate their performance. After that, only project timeline that signed by PMO will be executed, a PMO will monitor running projects to make sure the projects manage properly and can give recommendation to the general manager/board if a project need to be stopped or postponed according with urgent thing. Regarding reporting and responsibility there is no change as described in company structures before, Solution's Programmers and Project Managers still under General Manager of Solution, Research's Programmers under General Manager of R& D.

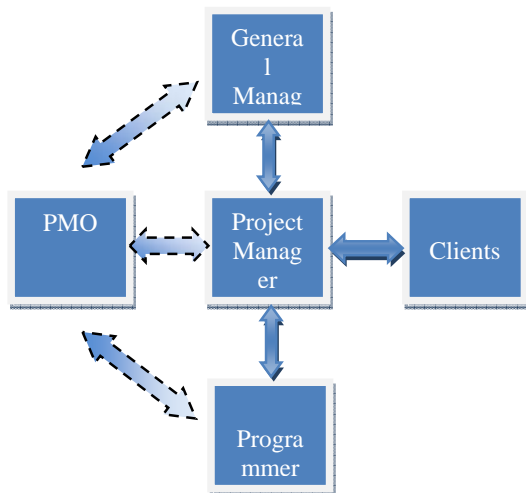


Figure 3. Project Coordination Diagram

Knowledge Management System implementation, if company has budget, it is recommended to buy license of knowledge management software like Microsoft Share Point which have integrated complete features like email, file sharing, announcement, discussion board, survey, personal view and user level access to make sharing knowledge and exchange

communication between programmers run faster and well documented. For a moment due to financial condition, company can implement free knowledge management software like Google Drive that has similar feature but with some limitation. This knowledge management system has to be implemented also for project that outsourced but with some limitation for outsourcing programmer to access it (e.g. they only can access knowledge that related with this project only and also has to write/documentation their knowledge related with this project).

Increase programmers' commitments to make them grow based on their work duration in company like give professional training based on their core competence for all programmers with work duration more than 2 years, give opportunity to take master degree for all programmers with work duration more than 5 years and also appreciate all employees with give them increment annual leave until certain number based on their work duration like 12 days annual leave for employees with 1-2 years' work duration, 13 days for 3 years' work duration, 14 days for 4 years' work duration, etc.

Cooperative strategy with partners either locally or globally with always monitoring and looking any other opportunities and possibilities in mobile industry to grow and expansion to other country with participate in international seminars, forums, training and competitions in mobile industry and do alliance with international mobile vendors like Rovio and Zynga.

IV. CONCLUSION AND IMPLEMENTATION PLAN

XYZ Company is one of company that focuses on mobile technology industry in Indonesia. XYZ Company has three divisions: Solution Division, Content Division and R & D division. Content and Solution division purposes to generate revenue meanwhile R & D division main task is to do research against latest mobile technology to keep company innovative and up to date with the latest mobile technology as per their vision and mission to become leading company in mobile industry and help brands, companies to be "mobile ready". In order to achieving its vision, XYZ Company strength its position with become Blackberry elite member and participated in many mobile competitions and won several of them. In achieving its mission, XYZ Company via Solution division strength its position with good portfolio by develop many mobile applications for various big companies like Nokia, Telkomsel, Samsung and BNI. Nowadays where mobile applications in high trends as one of marketing channel, XYZ Company grab and maximize this opportunity by partnering with one of big advertising agency in Indonesia to develop mobile application for their clients. This condition makes company facing a good problem about lack of programmers to handle all incoming projects.

This problem can be solved either do in-house with recruit more programmers or outsources a project but actually it is not as easy as imagine taking decision. They realize that outsource a project that become company core competence is not a good option and

hard to manage meanwhile it is also not easy decision to recruit more programmers even though they are sure that mobile application project has a bright future caused of revenue declining from Content division that makes them think twice before recruit new programmers.

Recruit more programmers is only the first step, the next step is about to retain and grow programmers to make them has a high commitment. In XYZ Company, programmers overall seems has not own a high commitment that marked by highly turnover. This is homework for company to increase programmer's commitment and in other hand programmers also seems quite difficult to share knowledge between them because there are no sufficient tool for them to share knowledge each other.

Currently to solve lack of programmers, company asks R & D programmers to assist Solution division handle incoming project. R & D programmers have capability to assist because previously they were solution programmers but on the other hand they have a problem with the unclear task that given to them. R & D programmers often confuse regarding scope of project and also company especially solution division act them as internal resources.

In this final project, we found that when decide to do in-house or outsourcing for a project, it is not as easy as imagine like project will be in-house if this is related with company core competence and will be outsourced if not too related with company's core competence. Here, we found that we are not only need to focus on project and resource itself but sometime we need to broader our insight against company in a whole and act like "outsider" before take decision, with act like "outsider" we can realize how good our system and know which parts that need improvement like establish Project Management Office to increase effectiveness and efficiency when manage projects, implement good knowledge management to make programmers easier to share knowledge, increase programmer commitment by doing training, etc. After all these things improved, company expected can be more effective and efficient and finally easier to take decision. Regarding implementation plan, firstly company has to discuss first regarding the policy, rules that will be implemented especially for Project

Management Office and Knowledge Management. When establish Project Management Office, it should has a clear role and authority what is the different between project manager to make everybody clear what is it's task that purposes to increase company's effectively and efficiency. Regarding Knowledge Management, company has to decide how the implementation, training, technology used and socialization. Both, Project Management Office and Knowledge Management need fully support from employees so company has to be transparent, hear their feedback and publicized the benefits to them.

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REFERENCES

- Admob, 2010, Admob Mobile Metrics Highlights, Admob.com, June, Quoted on 7 January 2012 from <http://metrics.admob.com/wp-content/uploads/2010/06/May-2010-AdMob-Mobile-Metrics-Highlights.pdf>.
- Longman, A & Mullins, J, 2005, *The Rational Project Manager*, Wiley.
- Project Management Institute, 2008, *A Guide To The Project Management Body of Knowledge (PMBOK Guide) – Forth Edition*, Project Management Institute, Inc.
- Tjakraatmadja, J.H. & Lantu, D.C., 2006, *Knowledge Management dalam Konteks Organisasi Pembelajaran, Sekolah Bisnis dan Manajemen (SBM) Institut Teknologi Bandung*.
- Viswanathan, P, *Advantages and Disadvantages of Mobile Marketing*, About.com. Quoted on 15 January 2012 from <http://mobiledevices.about.com/od/additionalresources/a/Advantages-And-Disadvantages-Of-Mobile-Marketing.htm>.